

Demographic and Epidemiological Studies

J. Lederberg and W. Bodmer

Maternal Age and Birth Order are known to play an important role in the incidence of chromosome anomalies which are in turn responsible for some of the most severe forms of mental retardation. However relatively little is known in detail about the demography of child spacing in the overall population which is quite important in every new survey of factors involved in chromosome anomaly. We are therefore continuing our collaborative study with the United States Bureau of the Census to establish the standard reference for this type of information from the 1960 Population Census.

In recent years there have been repeated claims of the epidemicity of chromosome disease. The best known of these comes from the studies on mongolism in Victoria by Collman and Stoller. Unfortunately these studies have not been subjected to the rather difficult statistical analysis which is appropriate for the analysis of clusters. Our computer simulations of the Australian data fail to support the published claims of a statistically significant clustering of cases it is therefore necessary to approach such assertions that this is evidence for a viral etiology of the disease with great caution. It should be emphasized that the statistical procedures needed to authenticate non-random deviations in time series are still controversial and this is one of the reasons it has been necessary to resort to a computer simulation. In addition a scrutiny of the data of admissions to the Pomona State Hospital failed to verify any similar clustering of cases although it must be admitted that there are many possible points of interference as between the occurrence of the cases and their admission to the hospital.

Most specific claims of association between nondisjunction and epidemics

of particular diseases have been made and we are following these up to the extent that the available data permits.